

**WHAT IS CLAIMED IS:**

1. A method for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising applying to said at least one keratinous fiber a composition comprising at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain, and heating said at least one keratinous fiber, wherein said at least one compound is present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber, and further wherein said composition is applied prior to said heating or during said heating.
2. A method according to claim 1, wherein said composition is applied prior to and during said heating.
3. A method according to claim 1, wherein said composition protects said at least one keratinous fiber from extrinsic damage and repairs at least one keratinous fiber following extrinsic damage.
4. A method according to claim 1, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from pentoses.
5. A method according to claim 4, wherein said pentoses are chosen from aldopentoses and ketopentoses.
6. A method according to claim 5, wherein said aldopentoses are chosen

from xylose, arabinose, lyxose, and ribose.

7. A method according to claim 5, wherein said ketopentoses are chosen from ribulose and xylulose.

8. A method according to claim 1, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from tetroses.

9. A method according to claim 8, wherein said tetroses are chosen from aldotetroses and ketotetroses.

10. A method according to claim 9, wherein said aldotetroses are chosen from erythrose and treose.

11. A method according to claim 9, wherein said aldotetroses are chosen from erythrulose.

12. A method according to claim 1, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from trioses.

13. A method according to claim 12, wherein said trioses are chosen from aldotrioses and ketotrioses.

14. A method according to claim 12, wherein said trioses are chosen from glyceraldehyde.

15. A method according to claim 12, wherein said trioses are chosen from dihydroxyacetone.

16. A method according to claim 1, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from furanoses and derivatives thereof.

17. A method according to claim 1, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides

are chosen from derivatives of  $C_3$  to  $C_5$  monosaccharides.

18. A method according to claim 17, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from imine derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiacetal derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiketal derivatives of  $C_3$  to  $C_5$  monosaccharides, and oxidized derivatives of  $C_3$  to  $C_5$  monosaccharides.

19. A method according to claim 17, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from oligosaccharides derived from said  $C_3$  to  $C_5$  monosaccharides.

20. A method according to claim 19, wherein said oligosaccharides derived from said  $C_3$  to  $C_5$  monosaccharides are chosen from xylobiose.

21. A method according to claim 17, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are further substituted with at least one group different from said at least one  $C_1$  to  $C_{22}$  carbon chain.

22. A method according to claim 1, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

23. A method according to claim 1, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is substituted.

24. A method according to claim 1, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

25. A method according to claim 1, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

26. A method according to claim 25, wherein said C<sub>16</sub> carbon chains are linear hexadecyl chains.

27. A method according to claim 26, wherein said C<sub>18</sub> carbon chains are linear octadecyl chains.

28. A method according to claim 1, wherein said at least one compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at the C1 position of said at least one compound.

29. A method according to claim 1, wherein said at least one compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at at least one of the hydroxyl groups of said at least one compound.

30. A method according to claim 1, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

31. A method according to claim 30, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

32. A method according to claim 1, wherein said composition further comprises at least one additional sugar different from said at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain.

33. A method according to claim 32, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

34. A method according to claim 33, wherein said monosaccharides are chosen from hexoses.

35. A method according to claim 34, wherein said hexoses are chosen from allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose, fructose, and tagatose.

36. A method according to claim 32, wherein said at least one additional sugar is substituted with at least one  $C_1$  to  $C_{22}$  carbon chain.

37. A method according to claim 36, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

38. A method according to claim 37, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

39. A method according to claim 37, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

40. A method according to claim 39, wherein said  $C_{16}$  carbon chains are linear hexadecyl chains

41. A method according to claim 39, wherein said  $C_{18}$  carbon chains are linear octadecyl chains.

42. A method according to claim 36, wherein said at least one additional sugar is substituted with said at least one  $C_1$  to  $C_{22}$  carbon chain at the C1 position of said at least one additional sugar.

43. A method according to claim 32, wherein said at least one additional

sugar is present in said composition in an amount ranging from 0.01% to 30% by weight relative to the total weight of the composition.

44. A method according to claim 43, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

45. A method according to claim 1, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

46. A method according to claim 1, wherein said at least one keratinous fiber is hair.

47. A method according to claim 1, wherein the extrinsic damage is caused by heating, UV radiation, or chemical treatment.

48. A method according to claim 1, further comprising at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils, mineral oils, and synthetic oils.

49. A method for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising:

applying to said keratinous fiber a composition comprising:

(i) at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides

substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain; and

(ii) at least one film forming agent, and

heating said at least one keratinous fiber,

wherein said at least one compound and said at least film forming agent are present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber, and

further wherein said composition is applied prior to said heating or during said heating.

50. A method according to claim 49, wherein said composition is applied prior to and during said heating.

51. A method according to claim 49, wherein said composition protects said at least one keratinous fiber from extrinsic damage and repairs at least one keratinous fiber following extrinsic damage.

52. A method according to claim 49, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from pentoses.

53. A method according to claim 52, wherein said pentoses are chosen from aldopentoses and ketopentoses.

54. A method according to claim 53, wherein said aldopentoses are chosen from xylose, arabinose, lyxose, and ribose.

55. A method according to claim 53, wherein said ketopentoses are chosen from ribulose and xylulose.

56. A method according to claim 49, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides

are chosen from tetroses.

57. A method according to claim 56, wherein said tetroses are chosen from aldotetroses and ketotetroses.

58. A method according to claim 57, wherein said aldotetroses are chosen from erythrose and treose.

59. A method according to claim 57, wherein said aldotetroses are chosen from erythrulose.

60. A method according to claim 49, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from trioses.

61. A method according to claim 60, wherein said trioses are chosen from aldotrioses and ketotrioses.

62. A method according to claim 60, wherein said trioses are chosen from glyceraldehyde.

63. A method according to claim 60, wherein said trioses are chosen from dihydroxyacetone.

64. A method according to claim 49, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from furanoses and derivatives thereof.

65. A method according to claim 49, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from derivatives of  $C_3$  to  $C_5$  monosaccharides.

66. A method according to claim 65, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from imine derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiacetal derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiketal derivatives of  $C_3$  to  $C_5$



monosaccharides, and oxidized derivatives of  $C_3$  to  $C_5$  monosaccharides.

67. A method according to claim 65, said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from oligosaccharides derived from said  $C_3$  to  $C_5$  monosaccharides.

68. A method according to claim 67, wherein said oligosaccharides derived from said  $C_3$  to  $C_5$  monosaccharides are chosen from xylobiose.

69. A method according to claim 65, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are further substituted with at least one group different from said at least one  $C_1$  to  $C_{22}$  carbon chain.

70. A method according to claim 49, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

71. A method according to claim 49, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is substituted.

72. A method according to claim 49, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

73. A method according to claim 49, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

74. A method according to claim 73, wherein said  $C_{16}$  carbon chains are linear hexadecyl chains.

75. A method according to claim 73, wherein said  $C_{18}$  carbon chains are linear octadecyl chains.

76. A method according to claim 49, wherein said at least one compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at the C1 position of said at least one compound.

77. A method according to claim 49, wherein said at least one compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at at least one of the hydroxyl groups of said at least one compound.

78. A method according to claim 49, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

79. A method according to claim 78, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

80. A method according to claim 49, wherein said composition further comprises at least one additional sugar different from said at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain.

81. A method according to claim 80, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

82. A method according to claim 81, wherein said monosaccharides are chosen from hexoses.

83. A method according to claim 82, wherein said hexoses are chosen from allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose,

fructose, and tagatose.

84. A method according to claim 80, wherein said at least one additional sugar is substituted with at least one  $C_1$  to  $C_{22}$  carbon chain.

85. A method according to claim 84, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

86. A method according to claim 84, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

87. A method according to claim 84, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

88. A method according to claim 87, wherein said  $C_{16}$  carbon chains are linear hexadecyl chains.

89. A method according to claim 87, wherein said  $C_{18}$  carbon chains are linear octadecyl chains.

90. A method according to claim 84, wherein said at least one additional sugar is substituted with said at least one  $C_1$  to  $C_{22}$  carbon chain at the C1 position of said at least one additional sugar.

91. A method according to claim 80, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

92. A method according to claim 91, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight

relative to the total weight of the composition.

93. A method according to claim 49, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

94. A method according to claim 49, wherein said at least one keratinous fiber is hair.

95. A method according to claim 49, wherein the extrinsic damage is caused by heating, UV radiation, or chemical treatment.

96. A method according to claim 49, further comprising at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils, mineral oils, and synthetic oils.

97. A method according to claim 49, wherein said at least one film forming agent is chosen from film forming polymers and film forming resins.

98. A method according to claim 49, wherein said at least one film forming agent is neutralized.

99. A method according to claim 49, wherein said at least one film forming agent is present in an amount ranging from 0.01% to 30% by weight relative to the total weight of the composition.

100. A method according to claim 99, wherein said at least one film forming agent is present in an amount ranging from 0.1% to 10% by weight relative to

the total weight of the composition.

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101. A composition for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain, wherein said at least one compound is present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber.

102. A composition according to claim 101, wherein said composition is heat-activated.

103. A composition according to claim 101, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from pentoses.

104. A composition according to claim 103, wherein said pentoses are chosen from aldopentoses and ketopentoses.

105. A composition according to claim 104, wherein said aldopentoses are chosen from xylose, arabinose, lyxose, and ribose.

106. A composition according to claim 105, wherein said ketopentoses are chosen from ribulose and xylulose.

107. A composition according to claim 101, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from tetroses.

108. A composition according to claim 107, wherein said tetroses are chosen from aldotetroses and ketotetroses.

109. A composition according to claim 108, wherein said aldotetroses are

chosen from erythrose and treose.

110. A composition according to claim 108, wherein said aldotetroses are chosen from erythrulose.

111. A composition according to claim 101, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from trioses.

112. A composition according to claim 111, wherein said trioses are chosen from aldotrioses and ketotrioses.

113. A composition according to claim 111, wherein said trioses are chosen from glyceraldehyde.

114. A composition according to claim 111, wherein said trioses are chosen from dihydroxyacetone.

115. A composition according to claim 101, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from furanoses and derivatives thereof.

116. A composition according to claim 101, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from derivatives of  $C_3$  to  $C_5$  monosaccharides.

117. A composition according to claim 116, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from imine derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiacetal derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiketal derivatives of  $C_3$  to  $C_5$  monosaccharides, and oxidized derivatives of  $C_3$  to  $C_5$  monosaccharides.

118. A composition according to claim 116, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from oligosaccharides derived from  $C_3$  to  $C_5$  monosaccharides.

119. A composition according to claim 118, wherein said oligosaccharides derived from C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from xylobiose.

120. A composition according to claim 116, wherein said wherein said derivatives of C<sub>3</sub> to C<sub>5</sub> monosaccharides are further substituted with at least one group different from said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain.

121. A composition according to claim 101, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is chosen from linear, branched and cyclic C<sub>1</sub> to C<sub>22</sub> carbon chains, which are saturated or unsaturated.

122. A composition according to claim 101, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is substituted.

123. A composition according to claim 101, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is chosen from C<sub>16</sub> to C<sub>18</sub> carbon chains.

124. A composition according to claim 101, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is chosen from C<sub>16</sub> carbon chains and C<sub>18</sub> carbon chains.

125. A composition according to claim 124, wherein said C<sub>16</sub> carbon chains are linear hexadecyl chains.

126. A composition according to claim 124, wherein said C<sub>18</sub> carbon chains are linear octadecyl chains.

127. A composition according to claim 101, wherein said at least one compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at the C1 position of said at least one compound.

128. A composition according to claim 101, wherein said at least one

compound is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at at least one of the hydroxyl groups of said at least one compound.

129. A composition according to claim 101, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

130. A composition according to claim 129, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

131. A composition according to claim 101, wherein said composition further comprises at least one additional sugar different from said at least one compound chosen from C<sub>3</sub> to C<sub>5</sub> monosaccharides substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain.

132. A composition according to claim 131, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

133. A composition according to claim 132, wherein said monosaccharides are chosen from hexoses.

134. A composition according to claim 133, wherein said hexoses are chosen from allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose, fructose, and tagatose.

135. A composition according to claim 131, wherein said at least one additional sugar is substituted with at least one C<sub>1</sub> to C<sub>22</sub> carbon chain.

136. A composition according to claim 135, wherein said at least one C<sub>1</sub> to



C<sub>22</sub> carbon chain is chosen from linear, branched and cyclic C<sub>1</sub> to C<sub>22</sub> carbon chains, which are saturated or unsaturated.

137. A composition according to claim 136, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is chosen from C<sub>16</sub> to C<sub>18</sub> carbon chains.

138. A composition according to claim 137, wherein said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain is chosen from C<sub>16</sub> carbon chains and C<sub>18</sub> carbon chains.

139. A composition according to claim 138, wherein said C<sub>16</sub> carbon chains are linear hexadecyl chains.

140. A composition according to claim 138, wherein said C<sub>18</sub> carbon chains are linear octadecyl chains.

141. A composition according to claim 131, wherein said at least one additional sugar is substituted with said at least one C<sub>1</sub> to C<sub>22</sub> carbon chain at the C1 position of said at least one additional sugar.

142. A composition according to claim 131, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

143. A composition according to claim 142, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

144. A composition according to claim 101, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

145. A composition according to claim 101, wherein said at least one

keratinous fiber is hair.

146. A composition according to claim 101, further comprising at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils, mineral oils, and synthetic oils.

147. A composition for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising:

(i) at least one compound chosen from  $C_3$  to  $C_5$  monosaccharides substituted with at least one  $C_1$  to  $C_{22}$  carbon chain, and

(ii) at least film forming agent,

wherein said at least one compound and said at least film forming agent are present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber.

148. A composition according to claim 147, wherein said composition is heat-activated.

149. A composition according to claim 147, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from pentoses.

150. A composition according to claim 149, wherein said pentoses are chosen from aldopentoses and ketopentoses.

151. A composition according to claim 150, wherein said aldopentoses are chosen from xylose, arabinose, lyxose, and ribose.

152. A composition according to claim 150, wherein said ketopentoses are chosen from ribulose and xylulose.

153. A composition according to claim 150, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from tetroses.

154. A composition according to claim 153, wherein said tetroses are chosen from aldotetroses and ketotetroses.

155. A composition according to claim 154, wherein said aldotetroses are chosen from erythrose and treose.

156. A composition according to claim 154, wherein said aldotetroses are chosen from erythrulose.

157. A composition according to claim 147, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from trioses.

158. A composition according to claim 157, wherein said trioses are chosen from aldotrioses and ketotrioses.

159. A composition according to claim 157, wherein said trioses are chosen from glyceraldehyde.

160. A composition according to claim 157, wherein said trioses are chosen from dihydroxyacetone.

161. A composition according to claim 147, wherein said C<sub>3</sub> to C<sub>5</sub> monosaccharides are chosen from furanoses and derivatives thereof.

162. A composition according to claim 147, wherein said  $C_3$  to  $C_5$  monosaccharides are chosen from derivatives of  $C_3$  to  $C_5$  monosaccharides.

163. A composition according to claim 162, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from imine derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiacetal derivatives of  $C_3$  to  $C_5$  monosaccharides, hemiketal derivatives of  $C_3$  to  $C_5$  monosaccharides, and oxidized derivatives of  $C_3$  to  $C_5$  monosaccharides.

164. A composition according to claim 162, wherein said derivatives of  $C_3$  to  $C_5$  monosaccharides are chosen from oligosaccharides derived from  $C_3$  to  $C_5$  monosaccharides.

165. A composition according to claim 164, wherein said oligosaccharides derived from  $C_3$  to  $C_5$  monosaccharides are chosen from xylobiose.

166. A composition according to claim 147, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

167. A composition according to claim 147, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is substituted.

168. A composition according to claim 147, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

169. A composition according to claim 147, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

170. A composition according to claim 169, wherein said  $C_{16}$  carbon chains are linear hexadecyl chains.

171. A composition according to claim 169, wherein said  $C_{18}$  carbon chains are linear octadecyl chains.

172. A composition according to claim 147, wherein said at least one compound is substituted with said at least one  $C_1$  to  $C_{22}$  carbon chain at the C1 position of said at least one compound.

173. A composition according to claim 147, wherein said at least one compound is substituted with said at least one  $C_1$  to  $C_{22}$  carbon chain at at least one of the hydroxyl groups of said at least one compound.

174. A composition according to claim 147, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

175. A composition according to claim 174, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

176. A composition according to claim 147, wherein said composition further comprises at least one additional sugar different from said at least one compound chosen from  $C_3$  to  $C_5$  monosaccharides substituted with at least one  $C_1$  to  $C_{22}$  carbon chain.

177. A composition according to claim 176, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

178. A composition according to claim 177, wherein said monosaccharides are chosen from hexoses.

179. A composition according to claim 178, wherein said hexoses are chosen from allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose, fructose, and tagatose.

180. A composition according to claim 176, wherein said at least one additional sugar is substituted with at least one  $C_1$  to  $C_{22}$  carbon chain.

181. A composition according to claim 180, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from linear, branched and cyclic  $C_1$  to  $C_{22}$  carbon chains, which are saturated or unsaturated.

182. A composition according to claim 181, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  to  $C_{18}$  carbon chains.

183. A composition according to claim 181, wherein said at least one  $C_1$  to  $C_{22}$  carbon chain is chosen from  $C_{16}$  carbon chains and  $C_{18}$  carbon chains.

184. A composition according to claim 183, wherein said  $C_{16}$  carbon chains are linear hexadecyl chains.

185. A composition according to claim 183, wherein said  $C_{18}$  carbon chains are linear octadecyl chains.

186. A composition according to claim 176, wherein said at least one additional sugar is substituted with said at least one  $C_1$  to  $C_{22}$  carbon chain at the C1 position of said at least one additional sugar.

187. A composition according to claim 176, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

188. A composition according to claim 187, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

189. A composition according to claim 147, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

190. A composition according to claim 147, wherein said at least one keratinous fiber is hair.

191. A composition according to claim 147, wherein said at least one film forming agent is chosen from film forming polymers and film forming resins.

192. A composition according to claim 147, wherein said at least one film forming agent is neutralized.

193. A composition according to claim 147, wherein said at least one film forming agent is present in an amount ranging from 0.01% to 30% by weight relative to the total weight of the composition.

194. A composition according to claim 193, wherein said at least one film forming agent is present in an amount ranging from 0.1% to 10% by weight relative to the total weight of the composition.

195. A composition according to claim 147, further comprising at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils,

mineral oils, and synthetic oils.

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196. A kit for protecting at least one keratinous fiber from extrinsic damage or for repairing at least one keratinous fiber following extrinsic damage comprising at least one compartment,

wherein said at least one compartment comprises a composition comprising at least one compound chosen from  $C_3$  to  $C_5$  monosaccharides substituted with at least one  $C_1$  to  $C_{22}$  carbon chain, wherein said at least one compound is present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber.

197. A kit according to claim 196, wherein said composition further comprises at least one additional sugar, different from said at least one compound chosen from  $C_3$  to  $C_5$  monosaccharides substituted with at least one  $C_1$  to  $C_{22}$  carbon chain.

198. A kit according to claim 196, wherein said composition further comprises at least one film forming agent.

199. A kit according to claim 196, further comprising a second compartment comprising a composition comprising at least one film forming agent.

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A4